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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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David R. Metzger  
SONNENSCHN NATH & ROSENTHAL  
P. O. Box #061080  
Wacker Drive Station, Sears Tower  
Chicago, IL 60606-1080

EXAMINER

RUTHKOSKY, MARK

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 04/23/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/675,386

Applicant(s)

SHIBAMOTO, GORO

Examiner

Mark Ruthkosky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement filed 3/9/2001 has been placed in the application file, and the information referred to therein has been considered as to the merits.

### ***Drawings***

3. The drawings received on 9/29/2000 have been approved by the examiner.

### ***Specification***

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Objections***

5. Claims 1-5 are objected to because of the following informality: In claim 1, line 8, the electrodes have a collector portion "to be" positioned at the outermost circumference. The examiner objects to the use of the "to be" language as it does not provide a structural limitation to the claim. The examiner suggests removing the "to be" language such that the claim reads

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“said rolled electrodes have a current collector one-side exposed portion at their one end in the longitudinal direction positioned at the outermost circumference and the current collector one-side exposed portion covers the outer circumference.” Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 1, the second paragraph includes the limitation that “said rolled electrodes have a current collector one-side exposed portion at their one end in the longitudinal direction to be positioned at the outermost circumference and the current collector one-side exposed portion covers the outer circumference.” As there are two exposed portions, one on each electrode opposite each other via a solid electrolyte layer, it is not clear as to how the relationship will provide each electrode with an exposed portion at the outermost circumference of the rolled electrode body. In this relationship, one electrode would appear on the outermost circumference of the rolled electrode body. Further, the limitation that “said rolled electrodes have a current collector one-side exposed portion at their one end in the longitudinal direction to be positioned at the outermost circumference” is indefinite as there is no antecedent basis for a circumference and it is not clear what the object is defining the circumference.

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In addition, the use of the phrase “both sides,” when defining the positive and negative electrodes, is indefinite as there is no antecedent basis in the claim to a current collector having “sides.” The term “longitudinal direction” in claims 1-5 is a relative term that renders the claim indefinite. It is not clear from this description what the reference point may be to define the “longitudinal direction” such that the electrode strips are rolled in this manner. In claim 1, line 7, there is insufficient antecedent basis for the phrase “said rolled electrodes” as the phrase “rolled electrodes” is not described in the claim. Perhaps, the element should be the “rolled electrode body.”

In claim 2, the phrase, “layer contains a swelling solvent and gelled” is indefinite as it is not clear how the layer can contain “gelled.” This appears to be a grammatical error.

In claim 3, the phrase, “said collector one-side-portion has a collector both-side-exposed-portion” is indefinite, as, by definition, the collector one-side-portion must have one side coated with active material. Perhaps, the claims should read that the electrode collector has a collector one-side exposed portion and a both-side exposed portion. In addition, the phrase “said collector both-side exposed portion covers the outer circumference of said collector one-side exposed portion by one turn or more” is indefinite, as the “collector one-side exposed portion” is not shown to have a circumference. Perhaps, this should read, “said collector-both-side exposed portion covers the outer circumference of said collector one-side exposed portion of the rolled electrode body by one turn or more.”

In claim 4, the phrase “said rolled electrodes have a collector one-side exposed portion at one end in the longitudinal direction of the electrodes to be positioned at the innermost circumference” is indefinite as it contradicts the limitations of claim 1 from which it depends. If

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the applicant means to suggest there are two separate collector one-side exposed portions, then it may be possible to describe this limitation as “a second collector one-side exposed portion.” As written, it is not clear as to the meaning of the claim.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Yde-Anderson (WO 97/03475.)

The instant claims are to a solid electrolyte cell comprising of a rolled electrolyte body consisting of a positive electrode having a strip electrode collector with both sides coated with a positive active material, and a negative electrode having a strip electrode collector with both sides coated with a negative active material, wherein the electrodes are layered with a solid electrolyte in between. The layers are rolled to form a rolled electrode body. The rolled electrodes have a current collector one-side exposed portion at their one end in the longitudinal direction positioned at the outermost circumference and the current collector one-side exposed portion covers the outer circumference of the rolled electrode body.

Yde-Anderson (WO 97/03475) teaches a solid electrolyte electrochemical cell comprising of a rolled electrolyte body consisting of a positive electrode having a strip electrode collector with both sides coated with a positive active material, and a negative electrode having a

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strip electrode collector with both sides coated with a negative active material, wherein the electrodes are layered with a solid electrolyte in between (see claim 1 and 4). The rolled electrodes have a current collector one-side exposed portion at their one end in the longitudinal direction positioned at the outermost circumference and the current collector one-side exposed portion covers the outer circumference of the rolled electrode body (see claims 2-3.)

With regard to claim 2, the solid electrolyte layer contains a polymer separator imbibed with a salt and a swelling solvent. For example, carbonates are used as the swelling solvent in the instant example 1. It is also used as a swelling solvent in the reference (see examples 1-2 and claim 4.) Imbibing the solvent into the polymer inherently forms a gel in both the application and the reference.

With regard to claims 3-5, the anode and cathodes are shown to have both sides of the collector free of active material at the same ends (see pages 20-21.) Both the interior and exterior circumferences of the wound assembly are covered with the exposed portion of the collector for more than one turn (see page 21, lines 9-23.) The current collector may be coated on only one side (see pg. 7, lines 20-25.) Various numbers of turns with and without active materials are described on page 7, lines 1-25. Thus, the claims are anticipated.

10. Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Segawa et al. (EP 936,690 A2).

Segawa et al. (EP 936,690 A2) teaches a non-aqueous electrolyte battery comprising of a rolled electrolyte body consisting of a positive electrode having a strip electrode collector with both sides coated with a positive active material, and a negative electrode having a strip electrode collector with both sides coated with a negative active material, wherein the electrodes are

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layered with a solid electrolyte in between (see claim 1 and figure 2). The rolled electrodes have a current collector one-side exposed portion at their one end in the longitudinal direction positioned at the outermost circumference and the current collector one-side exposed portion covers the outer circumference of the rolled electrode body (see claims 2-3.)

With regard to claim 2, the solid electrolyte layer contains a polymer separator imbided with a salt and a swelling solvent. For example, carbonates are used as the swelling solvent in the instant example 1. It is also used as a swelling solvent in the reference (see example 1 and page 4, lines 7-12 and 40-50.) Imbibing the solvent into the polymer inherently forms a gel in both the application and the reference.

With regard to claims 3 and 5, the anode and cathodes are shown to have both sides of the collector free of active material at the same ends (see claim 1 and figures 2-3.) The exterior circumference of the wound assembly is covered with the exposed portion of the collector for more than one turn (see page 4, lines 1-30.) Various numbers of turns with and without active materials are described.

Although the reference does not teach a current collector with only one-side exposed, a collector having both sides exposed consists of one side exposed. In addition, the reference does discuss a current collector having an active material where only one side is exposed (see page, 4, lines 20-25.) Thus, the claims are anticipated.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art is to a secondary cell with exposed current collector portions in a wound



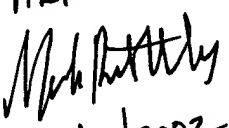
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shape. The art is pertinent to the scope of the invention; however, the Iwasaki reference does not anticipate the instant invention as compared to the art applied.

***Examiner Correspondence***

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 703-305-0587. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:00.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 703-308-0383.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

MARK RUTHKOSKY  
PATENT EXAMINER  
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4/10/2002